

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Masley Enterprises, Inc.

Delaware Manufacturing Extension Partnership

Masley Enterprises Eliminates Waste with Lean

Client Profile:

Masley Enterprises Inc. manufactures specialty gloves for the U.S. military. Based in Wilmington, Delaware the company employs 13 people.

Situation:

In 2005, the company received its first big order, a \$1.3 million contract to make 22,263 pairs of fuel-handling gloves for U.S. troops in Iraq and Afghanistan. Owners Donna and Frank Masley set up a batch manufacturing system, in which goods are produced in groups, rather than a continuous stream. But the workflow wasn't efficient and the number of worker hours required to make a profit eroded the already-slim profit margin. Plus, mistakes might not be discovered for a day or two, as gloves sat in boxes waiting for testing. In theory, that meant workers could continue to make the same errors multiple times until they were caught and corrected. In order to prepare for the company's \$7 million contract for 100,000 cold weather flyers gloves, the Masley's turned to the Delaware Manufacturing Extension Partnership (DEMEP), a NIST MEP network affiliate.

Solution:

DEMEP specialist, John Barone, encouraged the Masley's to rethink their processes. Lisa Weis, a DEMEP field agent, evaluated the way workers had been assembling, testing and packing gloves. She analyzed each step of the process, mapping the work flow and performing timing studies. DEMEP developed a Lean manufacturing plan, a strategy that focuses on eliminating waste. That includes not only scrap, but all steps or processes that do not add value to the final product. For example, Weis rearranged and redesigned work tables to shorten the time workers spent moving between stations, shaving wasted minutes off the clock. "Thanks to Lisa, there is much less walking to and from stations," Masley said. "Those kinds of efficiencies help us to get the job done with fewer people." Instead of turning out gloves in batches, the Lean manufacturing process takes each pair from start to finish, from assembly to testing to packaging. Assembly is broken down into 11 different tasks, with employees trained to handle each task on the line. Workers rotate positions every hour, rather than the previous system of twice a week. Because sewing is such a specialized skill, there are designated workers for that task. "But they all work on the same size glove, which is more efficient, where before they would work on different sizes," Masley said. As a result of DEMEP's assistance, the worker hours needed to produce gloves has been reduced by 20 percent. "The gloves don't sit around in piles," Masley says. "We know if a mistake occurred in the hour before, and precisely who was working on that task the hour before." Previously, one employee worked full time to repair gloves with minor mistakes. Lean manufacturing reduced the time devoted to repairs to two or three hours a day. "We have better quality because we catch mistakes quicker," Masley said. Masley Enterprises set a lofty goal for its defect rate, less than 1 percent for every 700-800 gloves that are made. The efficiencies created through Lean manufacturing also are enabling the Masley's to channel more money back into the business. The Masleys' hard work, tenacity and entrepreneurial spirit has been recognized by the

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Small Business Administration (SBA). They are the SBA's Delaware Small Business Persons of the Year.

Results:

- * Reduced production hours by 20 percent.
- * Reduced repair time from 8 hours to 2 to 3 hours a day.
- * Defect rate of less than 1 percent every 700-800 gloves.

Testimonial:

"This new way of doing things has transformed our business, greatly increasing our productivity. It's even more rewarding because it has helped us to make work a better and more comfortable place for our employees."

Frank Masley, President